

Using Levees

for Flood Protection



A levee is a barrier that holds water away from the building. It can protect your home from flooding as well as from the force of water, scour at the foundation and impacts of floating debris.

Cost and Other Considerations

A properly built levee takes a lot of space. Its sheer mass keeps it from moving. Long, gentle side slopes increase stability and provide for easier maintenance. A typical levee 3 feet high should be 21 feet wide. If the inner edge is 4 feet from the building, its outer edge will be 25 feet from the building.

Where the property line is too close to allow an adequate levee, a partial floodwall or other floodproofing system can be used and connected to a partial levee.

For a given height of flood protection, a permanent earthen levee is about half the cost of a floodwall and slightly more than a commercial water-inflatable dam.

It is easier to increase your flood protection level with a levee than with other permanent systems. When built with a broad, well-compacted base, levees can be topped with sandbags or water-inflated dams.

To keep the permanent levee at a low or variable height, you may choose to design the system to protect against frequent, low-level floods and top it with a temporary barrier for the less frequent, higher floods.

If the depth of flood risk increases in the future, a well-founded levee can be topped with a permanent floodwall or additional fill.

Neighbors often view levees as aggravating their own flood situations. Protecting the area right around a building may be less objectionable than excluding water from your entire lot.

Points to remember:

- Levees must be built to withstand the forces of standing water and flowing water. The potential effects of water currents should be analyzed by an engineer.
- Levees may require underground extensions to prevent seepage through the soil, depending on soil type.
- You must provide drainage for rain that falls inside the levee system when it's NOT flooding and when it IS flooding.
- It's very hard to add drains once the levee is built, so make sure the number, size and locations are right before you pile on the dirt.
- A pump is needed inside the protected area. Even good systems leak. Water can seep under or through the levee, and rain will fall on the inside. You have to pump it out during a flood. Placing the levee closer to the building may reduce your dependence on pumps.
- Levees have natural enemies: burrowing creatures and tree roots. Check your levee each year for signs of tunneling.
- Check with the local building or permit office to see if a permit is required.
- Some communities review plans to be sure the levee will not interfere with drainage and will not diminish flood storage capacity in violation of local law.
- If water goes over the top or breaks a levee, the protected area may fill with water rapidly. Rushing water and debris may come crashing into the building.
- Plan for your safety. Decide in advance when you will abandon a flood fight and save your life.

Additional flood protection and recovery information is available from the parish office of the Louisiana Cooperative Extension Service or from our web site at

www.louisianafloods.org.



Louisiana State University
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Earthen Levee

a look inside and underground

Levee Height	Width of levee base
2 feet	14 feet
3 feet	21 feet
4 feet	28 feet
5 feet	35 feet

An opening framed with a wall or pillar-type structure can be fitted with a custom-made gate that floats, rolls or swings into place. Other options include removable panels, sandbags or water-inflated dams.

Build the levee in 6-inch "lifts." Compact each lift before adding the next one. Clay and silty or sandy clay soils make good barriers; sandy or loam soils with less than 30 percent clay content should not be used.

If importing clay for the core, build the clay up in the center and use native soil along the edges.

Use grass or ground cover to make the levee more stable, resistant to erosion and easier to maintain. Avoid plants with large root balls or long root systems.

Sump pump
Rain that falls inside your levee when the drains are closed must be pumped out.

Place drain tubes wherever water flows off the property. Prevent back-flow with flap-valves or caps. Compact soil firmly around drain tubes and underground structures. When water finds its way through loose soil, the flow will create a larger hole and could lead to complete levee failure.

Core trench
Block underground seepage with compacted clay or waterproof cement in a trench. Panels or other flood-resistant sheeting may be used if the material will hold up to being buried in the ground many years, and termites or wildlife won't damage it.

Ground level
Remove vegetation and topsoil to ensure proper bonding. Use care and save the sod.

Avoid damaging underground gas, water and electrical lines or your sewer line during construction. Ask your utility company to help you locate the lines.

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